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Records of the Boarmiini (Geometridae ; Ennominae) from Thailand II*

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Abstract 42 species of the Boarmiini are recorded from Thailand, and two species related to the Thai material taken from Nepal or Myanmar are treated. *Uliura kurokoi, Darisa peracuta* and *Coremecis stueningi* are described as new to science.

Key words Geometridae, Ennominae, Boarmiini, new species, Thailand, Nepal.

In my previous paper (Sato, 1991), 34 species of the genera *Hypomecis, Cleora* and *Alcis* belonging to the tribe Boarmiini defined by Holloway (1993) were recorded from Thailand. It was the first part of my reports mainly based on the collections of the Lepidopterological Expeditions of the University of Osaka Prefecture to Thailand in 1981, 1983, 1985 and 1987, and the Overseas Scientific Research Project of the National Science Museum in 1987. This paper is the second report on the Boarmiini from Thailand based on the above-mentioned collections. Besides, some materials in the Zoological Museum (Copenhagen), Zoologishes Forschungsinstitut und Museum Alexander Koenig (Bonn), Mr Sommerer's collection (Munich) and my own collection donated by my friends are added. The detailed accounts of the Lepidopterological Expeditions of the University of Osaka Prefecture to Thailand were given by Kuroko & Moriuti (1987) and Moriuti (1989).

In this paper 42 species of the following genera are recorded with the descriptions of three new species: *Alcis* Curtis, *Hypomecis* Hübner, *Uliura* Warren, *Darisa* Moore, *Coremecis* Holloway, *Chorodna* Walker, *Sinameda* Warren, *Lassaba* Moore, *Ophthalmitis* Fletcher, *Pseudalcis* Warren, *Catoria* Moore, *Zanclomenophra* Holloway, *Arichanna* Moore, *Ephemerophila* Warren and *Dasyboarmia* Prout. The rest of the boarmid genera from Thailand will be recorded in my future parts before long.

Abbreviations. Collectors. K: Hiroshi Kuroko. M: Sigeru Moriuti. S: Tosihisa Saito. A: Yutaka Arita. Y: Yutaka Yoshiyasu. The location of the specimens. BMNH: The Natural History Museum, London. CBM: The Natural History Museum and Institute, Chiba, Japan. NSMT: National Science Museum, Tokyo. UOP: Entomological Laboratory, University of Osaka Prefecture, Sakai, Japan. ZFMK: Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn. ZMB: Zoologisches Museum an der Humboldt-Universität, Berlin. ZMC: Zoological Museum, Copenhagen, Denmark. RS: R. Sato collection, Niigata.

Alcis hodeberti Herbulot

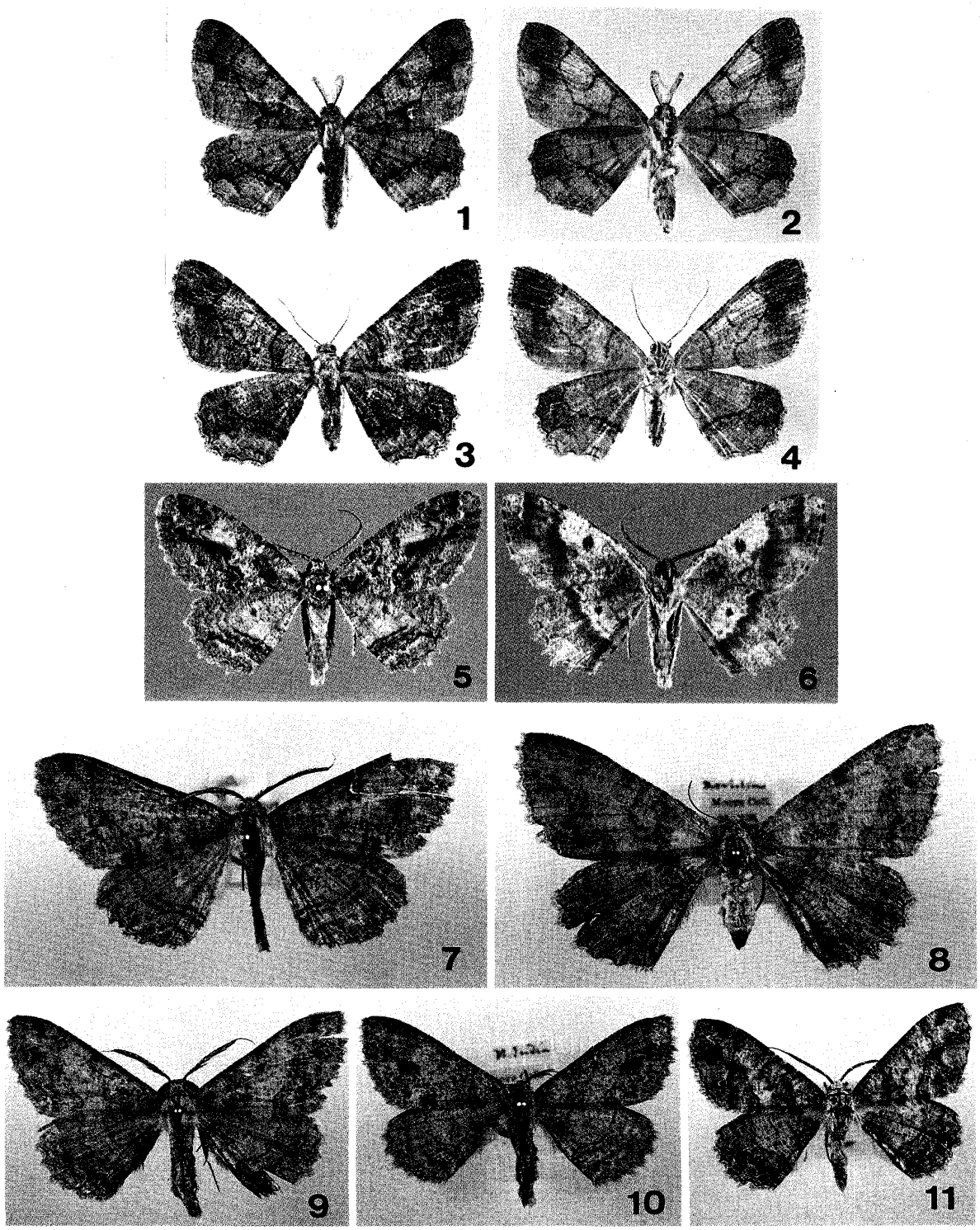
Alcis hodeberti Herbulot, 1987, *Bull. Soc. ent. Mulhouse* **1987**: 4.
Alcis decussata: Sato, 1991: 283 (part, *nec* Moore, 1868).

Chiang Mai, Doi Pakia 1,500 m, 1 ♀, 5-7. ix. 1987 (M.S.A.Y.); Doi Pui 1,400 m, Phu Phing Palace, 1 ♂, 7-9. ix. 1987 (M. Owada); Doi Suthep-Pui Nat. Park, Doi Pui 1,650 m, 1 ♂,

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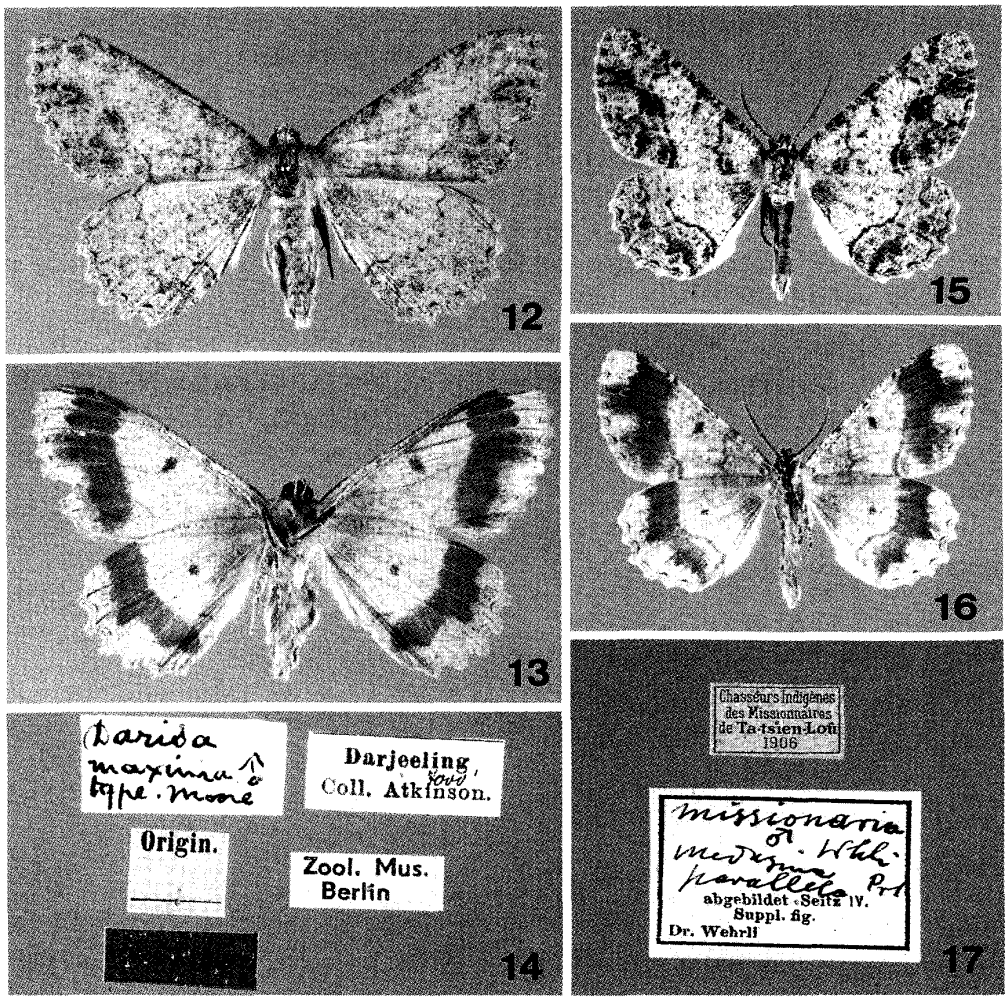
Figs 1-4. *Uliura kurokoi* sp. nov. 1: Holotype ♂. 2: *Ditto*, underside. 3: Paratype ♀. 4: *Ditto*, underside.

Figs 5-6. *Coremecis stueningi* sp. nov. 5: Holotype ♂. 6: *Diito*, underside. Photographs by Dr Stüning.

Figs 7-11. Type material of *Darisa* spp. 7: *Medasina parallela* Prout. Holotype ♂. 8: *Darisa maxima* Moore. Paralectotype ♀. 9: *Boarmia mucidaria* Walker. Lectotype ♂. 10: *Boarmia plagiaria* Walker. Holotype ♂. 11: *Medasina firmilinea* Prout. Lectotype ♂. All in BMNH.

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Figs 12-17. Type material of *Darisa* spp. 12: *Darisa maxima* Moore. Lectotype ♂. ZMS. 13: *Ditto*, underside. 14: *Ditto*, labels. 15: *Medasina parallela missionaria* Wehrli. Lectotype ♂. ZFMK. 16: *Ditto*, underside. 17: *Ditto*, labels. Photographs by Dr Stüning.

17-28. x. 1984 (Karsholt, Lomholdt, Nielsen); Doi Inthanon, South Ridge 1,650 m, 2 ♀, 18-21. x. 1983 (M. Owada).

I recorded 5 ♂ 3 ♀ of *Alcis decussata* from Chiang Mai (Sato, 1991), but some of them should have been correctly identified with *hodeberti*. Here I recorded two species again.

Alcis decussata (Moore)

Cleora decussata Moore, 1868, *Proc. zool. Soc. Lond.* **1867**: 628, pl. 33: 4.

Chiang Mai, Doi Inthanon 2,500 m, 2 ♂, 3-5. ix. 1987 (M. Owada); Doi Inthanon 2,571 m, 1 ♂, 9. ix. 1987 (M.S.A.Y.).

Alcis macroclarata Sato

Alcis macroclarata Sato, 1993: 11, pl. 35: 11-12.
Alcis semiclarata: Sato, 1991: 283 (part, *nec* Walker, 1862).

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In my previous paper (Sato, 1991), I recorded 13 ♂ 14 ♀ of *Alcis semiclarata* (Walker) from Thailand. During my further examination of much material of *semiclarata* and its allies from India, Nepal and Thailand, I found that some species had been mixed up under the name of *semiclarata*. As a result I regarded three species, *quadrifera* (Walker), *rufomarginata* (Moore) and *subochrearia* (Leech), as distinct, and I described *albilinea, neoclarata, paraclarata* and *macroclarata* as new to science (Sato, 1993). All the specimens recorded from Thailand as *semiclarata* by me were identified with *macroclarata* or *paraclarata*. In order to prevent later confusion, the data of both species are recorded again in the following line.

Type material. Holotype. Chiang Mai, Doi Inthanon 2,571 m, 1 ♂, 10. ix. 1987 (S.A.Y.), UOP. Paratypes. Type locality, 4 ♂ 5 ♀, 3-5. ix. 1987 (M. Owada), NSMT ; 1 ♀, 8. ix. 1987 (M.Y.) ; 4♂2♀, 9. ix. 1987 (A.Y.) ; 1♂, 11. ix. 1987 (M.S.A.), UOP. Other material. Chiang Mai, Doi Inthanon Nat. Park 2,200-2,500 m, 2♂2♀, 22-23. x. 1984 (Karsholt, Lomholdt, Nielsen), ZMC.

Alcis paraclarata Sato

Alcis paraclarata Sato, 1993 : 10, pl. 35, figs 5-6.
Alcis semiclarata : Sato, 1991 : 283 (part, *nec* Walker, 1862).

Paratypes. Chiang Mai, Doi Inthanon 2,571 m, 2 ♂ 3 ♀, 2. xi. 1985 (M.S.A.) ; *ditto* 1,300 m, 1 ♀, 1 & 3. xi. 1985 (M.S.A.), UOP.

Hypomecis oblivia (Prout), **comb. nov.** (Fig. 26)

Medasina oblivia Prout, 1925, *Novit. zool.* **32** : 55.

Chiang Mai, Doi Inthanon Nat. Park 1,600 m, 1 ♂, 22-24. x. 1984 (Karsholt, Lomholdt, Nielsen), ZMC ; Doi Inthanon, South Ridge 1,650 m, 1 ♂, 18-21. x. 1983 (M. Owada).

Male genitalia (Fig. 52) show this species belonging to the genus *Hypomecis* Hübner.

Uliura combustaria (Walker)

Gnophos combustaria Walker, 1866, *List Specimens lepid. Insects Colln Br. Mus.* **35** : 1582.
Uliura combustaria : Sato, 1994 : 52.

Chiang Mai, Doi Inthanon 2,500 m, 1 ♂, 3-5. ix. 1987 (M. Owada).

Uliura kurokoi **sp. nov.** (Figs 1-4)

Length of forewing. ♂ ♀ 20-22 mm. Male antenna bipectinate, the longest pecten about eight times as long as the length of the segment ; terminal one-third of antenna without pecten. Legs yellowish brown. Tegula, patagium and thoracic vestiture brown ; labial palpus brown. Forewing : brown, variegated with dark and light areas ; lines black ; antemedial line gently excurved, then incurved to inner margin ; postmedial line medially excurved beyond discocellular spot, approaching antemedial line near inner margin ; discocellular spot represented by short black streak ; one or two black horizontal short streaks distad of postmedial line between median veins. Hindwing : similar to forewing in colour and maculation ; antemedial line lacking, postmedial line broader, parallel with outer margin ; discocellular streak less developed, often vanished ; medial line almost straight. Underside : much paler with more distinct maculation than on forewing.

Male genitalia (Fig. 30). Similar to those of *combustaria*, but medial part of gnathos

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smaller, ventral margin of costa strongly outcurved distally, a group of spines on vesica less developed.

Female genitalia (Fig. 48). Similar to those of *combustaria*, but colliculum longer and broader, posterior part of bursa copulatrix more heavily ribbed and sclerotized, enlarged at one side posteriorly, signum larger.

Holotype. ♂, Thailand, Chiang Mai, Doi Inthanon, Maeo Khun Klang 1,300 m, 16-17. x. 1983 (M. Owada), NSMT. Paratypes. Thailand. Chiang Mai, Doi Inthanon 1,300 m, 3 ♂ 1 ♀, 1 & 3. xi. 1985 (M.S.A.); Doi Pui 1,300 m, 1 ♀, 30. v. 1983 (K.M.A.Y.), 6 ♂ 1 ♀, 26-27. x. 1985 (M.S.A.); Doi Chang Khian 1,250 m, 1 ♂, 27. v. 1983 (K.M.A.Y.), 2 ♂, 25. x. 1985 (M.S.A.), UOP; Doi Suthep 1,200 m, 1 ♂, 23. x. 1983 (M. Owada), NSMT; Doi Suthep 1,325 m, Meo Village View Point, 1 ♂ 2 ♀, 22. xi-4. xii. 1989 (Schnitzler), ZFMK. India. 1 ♂, "Naga hills, 5,000-8,000 ft, July-Aug. 1889, W. Doherty/Collectio H. J. Elwes/ Rothschild Bequest B.M. 1939-1", BMNH.

Distribution. Thailand, India.

Uliura gratiosa Sato

Uliura gratiosa Sato, 1995: 33.

Chiang Mai, Doi Inthanon Nat. Park 1,600 m, 2 ♂, 22-24. x. 1984 (Karsholt, Lomholdt, Nielsen), ZMC. Doi Inthanon, South Ridge 1,650 m, 2 ♀, 18-21. x. 1983 (M. Owada), NSMT.

This species was described from Nepal and Thailand by me (Sato, 1995). Above mentioned specimens were designated as paratypes.

Uliura sp.

Medasina sp.: Sato, 1993: 22, pl. 37: 22 (♂), fig. 164 (♂ genitalia).

Chiang Mai, 1 ♂, Doi Inthanon 1,300 m, 1 & 3. xi. 1985 (M.S.A.), UOP.

This species is closely related to *U. infausta* (Prout), **comb. nov.** from Taiwan and will be described as a new species by Dr Stüning. I already recorded this undescribed species from Nepal as a member of *Medasina*, with the figures of male moth and genitalia (Sato, 1993), the structure of which shows it to be a member of the genus *Uliura*.

Darisa mucidaria (Walker) (Figs 9-10, 22-23)

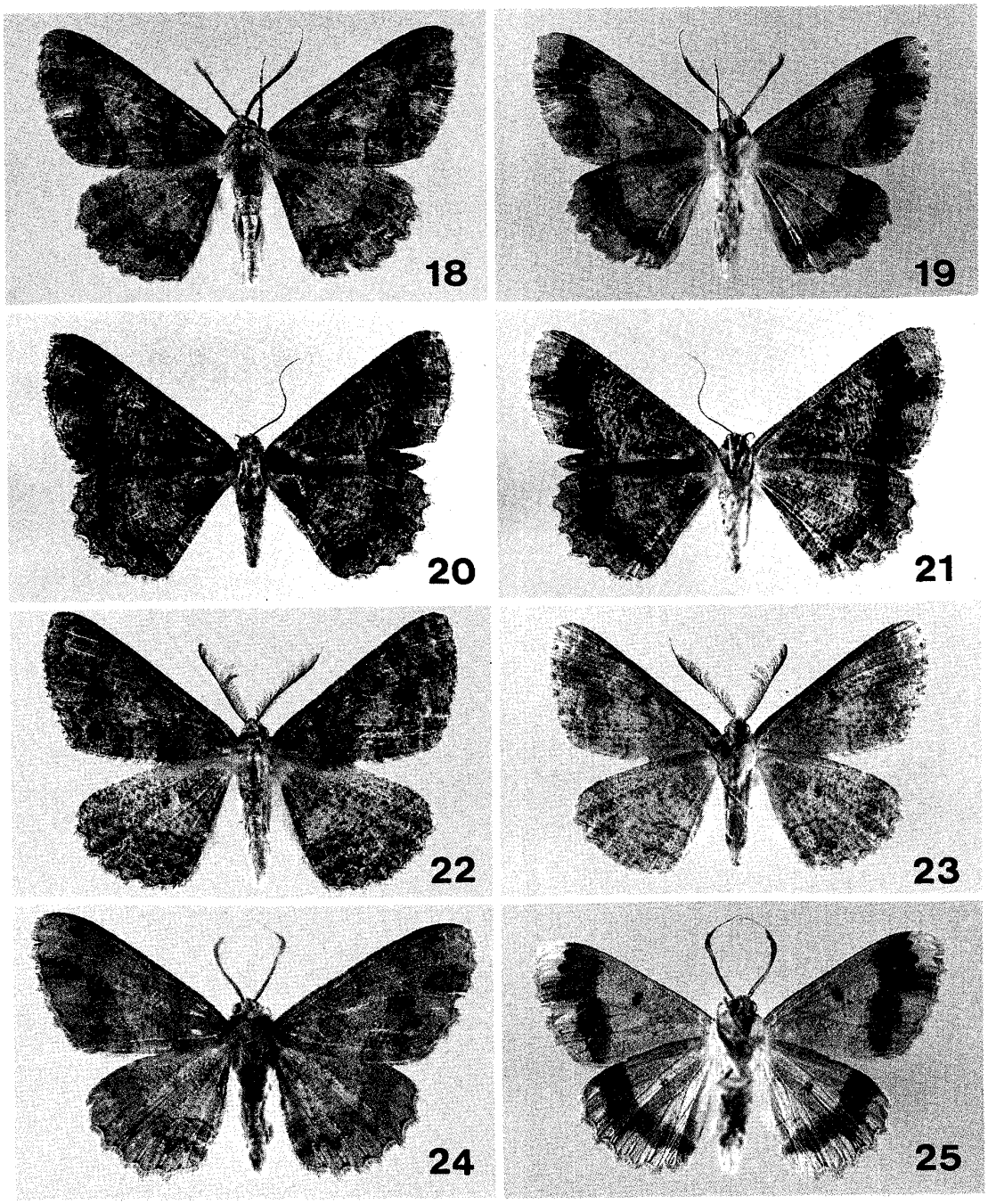
Boarmia mucidaria Walker, 1866, *List Specimens lepid. Insects colln Br. Mus.* **35**: 1581.
Medasina mucidaria: Hampson, 1895: 286.
Boarmia plagiaria Walker, 1869, *Characters undescribed Lepid. Heterocera*: 61. **Syn. nov.**
Darisa mucidaria: Sato, 1994: 52.

Chiang Mai, Doi Inthanon 2,571 m, 1 ♂ 1 ♀, 22. v. 1983 (K.M.A.Y.), 1 ♂, 9. ix. 1987 (A.Y.), *ditto* 2,500 m, 1 ♂, 3-5. ix. 1987 (M. Owada); Doi Inthanon Nat. Park 2,200 m-2,500 m, 1 ♂ 1 ♀, 22-23. x. 1984, *ditto* 1,600 m, 1 ♂, 22-24. x. 1984 (Karsholt, Lomholdt, Nielsen). India. Darjeeling, 1 ♂ 1 ♀, v. 1979 (T. Hasegawa); 1 ♂ 1 ♀, 14. vi. 1987 (T. Miyashita).

In the course of my study on Thai material of *mucidaria*, I found three species mixed up. My careful examination of the type specimens of *mucidaria* and its allies led up to the following conclusion. *Boarmia plagiaria* Walker, 1869 should be synonymized with *mucidaria* because of the identity of the male genitalia, and both *Darisa maxima* Moore, 1888 and *Medasina parallela* Prout, 1927 should be separated as independent species, being

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Figs 18–25. *Darisa* spp. 18: *D. peracuta* sp. nov. Holotype ♂. 19: *Ditto*, underside. 20: *D. peracuta* sp. nov. Paratype ♀. 21: *Ditto*, underside. 22: *D. mucidaria* (Walker), ♂. 23: *Ditto*, underside. 24: *D. maxima* (Moore), ♂. 25: *Ditto*, underside.

clearly different from *mucidaria* in the male genitalia. Another species from Nepal is worth being described as new to science. I examined the following material of *mucidaria* and *plagiaria* in BMNH.

Material examined. Lectotype of *Boarmia mucidaria* (Fig. 9), here designated, ♂, labelled "Type/*Boarmia mucidaria*/N. India, 65 42", BMNH. Holotype of *Boarmia plagiaria* (Fig. 10), ♂, "Type/*Boarmia plagiaria*, Type Walk., N. India, coll. Morris/Moore coll. 94-106", BMNH. 1 ♂, "Darjiling, Russell/Moore Coll. 94-106/Geometridae

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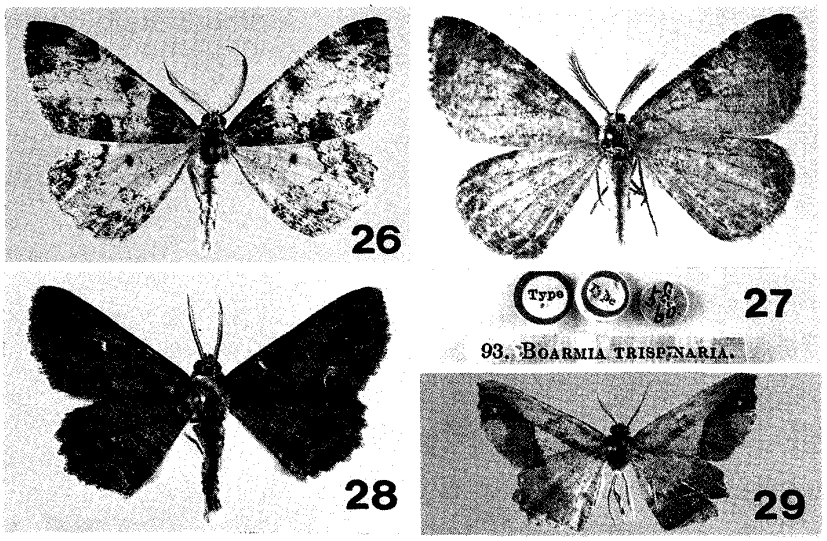


Fig. 26. *Hypomecis oblivia* (Prout). 27. *Boarmia trispinaria* Walker. Lectotype ♂. BMNH. 28. *Ephemerophila lignata* (Warren). 29. *Ephemerophila torridaria* (Moore).

genitalia slide No. 13343 ♂", BMNH.

In appearance *mucidaria* is characterized by a short tooth from antemedial line on forewing and less defined submarginal line on underside of wings.

Male genitalia (Figs 39-44). The apex of juxta bifurcate, but the degree of depth variable, sometimes not forked. Variation in the shape of apical part of juxta as shown in Figs 40-44. Stout lateral thorn of aedeagus, bearing many spines on the one side, abruptly tapered to a point apically.

Female genitalia (Fig. 36). Colliculum short. Bursa copulatrix almost membranous, cylindrical with a lightly sclerotized projection caudally. No signum.

Distribution. Thailand, Nepal, India.

Darisa maxima Moore, **sp. rev.** (Figs 8, 12-14, 24-25)

Darisa maxima Moore, 1888, *in* Hewitson & Moore, *Descr. new Indian lepid. Insects Colln late Mr Atkinson* : 243.

Chiang Mai, Doi Chang Khian 1,250 m, 1 ♂, 22. v. 1983 (K.M.A.Y.), 2 ♂, 27. v. 1983 (K.M.A.Y.); Doi Pui 1,300 m, 1 ♂, 26-27. x. 1985 (M.S.A.), 1 ♀, 12. v. 1986 (native collector). Doi Inthanon Nat. Park 1,600 m, 1 ♂, 22-24. x. 1984 (Karsholt, Lomholdt, Nielsen).

Maxima has been treated as a junior synonym of *mucidaria* since Hampson (1895 : 286), but is distinguished from *mucidaria* as mentioned below. Dr Stüning examined the male type specimen in ZMB, and sent me photos of the moth and its genitalia. Besides, I also examined one female type specimen in BMNH.

Type material examined. Lectotype (Figs 12-14), here designated, ♂, labelled "Typus/ Origin/Darjeeling, 400, Coll. Atkinson/*Darisa maxima* ♂, type, Moore/Zool. Mus. Berlin", ZMB. Paralectotype, here designated, 1 ♀ (Fig. 8), "Type/Darjeeling 7,000 ft./ Moore coll. 94-106/*Darisa maxima* ♀ type, Moore", BMNH.

Different from *mucidaria* in the following characters. A pair of hair-tufts of the third abdominal sternite more developed, much longer than those of the other sternites.

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Wings yellowish brown, not so variable in colour as in *mucidaria*. Underside of both wings with more distinct blackish brown submarginal band.

Male genitalia (Figs 32, 38). Similar to those of *mucidaria*. Medial part of gnathos broader; costa of valva more swollen basally; sacculus shorter; the apex of juxta wider, shallowly concave; lateral thorn of aedeagus bluntly pointed at apex, bearing less spines in number; 5-6 setal spines on vesica.

Female genitalia (Fig. 35). Similar to those of *mucidaria*. Bursa copulatrix shorter; caudal projection less developed.

Distribution. Thailand, India.

Darisa parallela (Prout), **comb. nov.** (Fig. 7)

Medasina parallela Prout, 1927, *J. Bombay nat. Hist. Soc.* **31**: 946.

Parallela was described based on one male from Burma [Myanmar]. Since then any specimens have not been recorded yet. Female unknown.

Type material examined. Holotype (Fig. 7). ♂, labelled "Type/Hpimaw Fort, N.E. Burma 8000 ft, VI. 23, A. E. Swann, *Medsina parallela* Prout ♂ type/Rothschild Bequest B.M. 1939-1", BMNH. I also examined the photographs of the genitalia taken by Dr Stüning.

Similar to *maxima*, but hair-tufts of abdominal sternites less developed, antemedial line of forewing more direct, without the inward curve and the long tooth between veins Cu_2 and 2A.

Male genitalia (Fig. 33). Most similar to those of *mucidaria* among the congeners. The apex of juxta not bifurcate, but broadly rounded; costa of valva not swollen basally.

Distribution. Myanmar.

Darisa peracuta **sp. nov.** (Figs 18-21)

Medasina mucidaria: Sato, 1993: 23 (part, *nec* Walker, 1866).
Darisa mucidaria: Sato, 1994: 52 (part, *nec* Walker, 1866).

Length of forewing. ♂ 26-29 mm, ♀ 29-31 mm. Similar to *mucidaria*, but distinguished from it by several features. A little larger. A pair of hair-tufts of the third abdominal sternite much longer, as in *maxima*. Wings broader. Antemedial line of forewing more acutely angled outwards, forming a longer tooth between veins Cu_2 and 2A. Underside of both wings with more distinct dark brown submarginal band as in *maxima*.

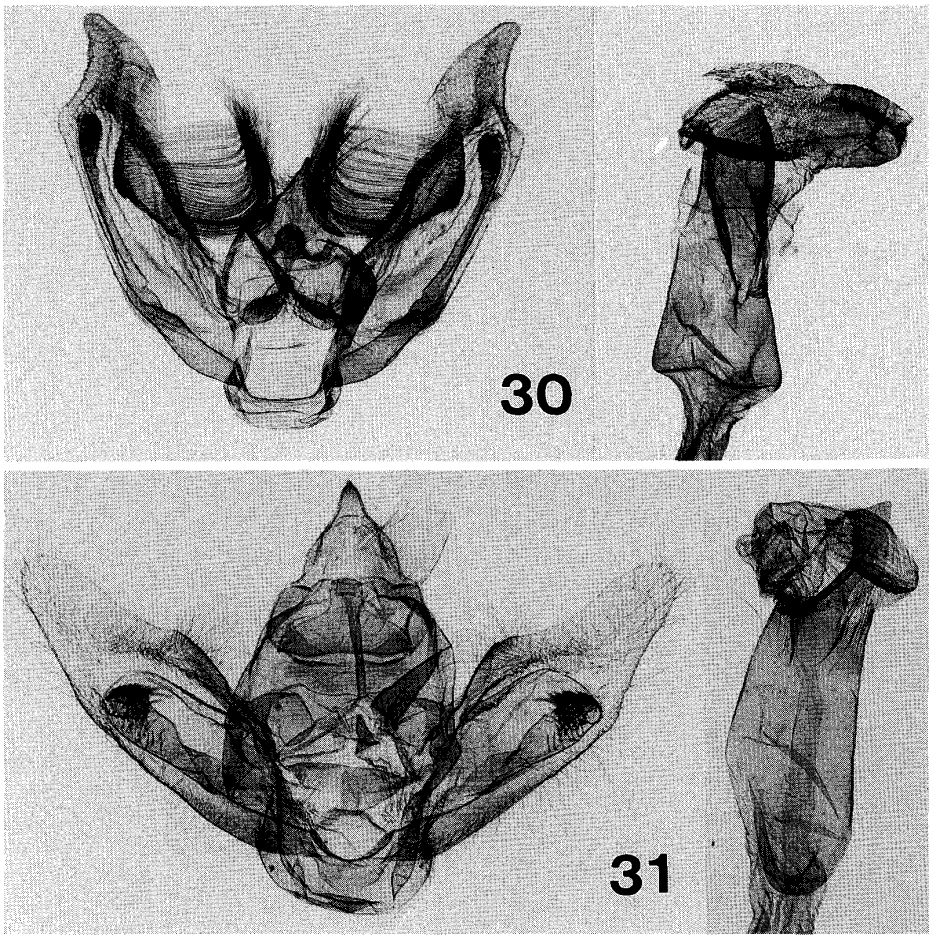
Male genitalia (Fig. 37). Medial part of gnathos and costal swelling as in *mucidaria*. Juxta and aedeagus similar to those of *maxima*, but the apex of juxta less concave and lateral thorn of aedeagus rounded at apex with more spines in number. Sacculus longest among the congeners.

Female genitalia (Fig. 34). Similar to those of *mucidaria*. Colliculum longer; the caudal projection of bursa copulatrix not so long as in *mucidaria*, but much longer than in *maxima*.

Holotype. ♂, C. Nepal, Gandaki, Jagat 1,250 m, 16. v. 1982 (Y. Watanabe), NSMT. Paratypes. C. Nepal, Godavari 1,600 m, 1 ♂, 24. vi. 1990, 1 ♂, 12. ix. 1991, 1 ♂, 22. v. 1991, 2 ♀, 26. ix. 1992 (T. Haruta); Gandaki, Kaski Dist., Birethanti 1,020 m, 1 ♂, 13. x. 1981 (M. Owada). E. Nepal, Janakpur, Dolakha, Jiri 2,350 m, 2 ♀, 31. v-2. vi. 1993 (T.

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Figs 30-31. Male genitalia. 30: *Uliura kurokoi* sp. nov. RS-4462. 31: *Coremecis stueningi* sp. nov. RS-4320.

Haruta), Shera 1,420 m, 1 ♀, 19. x. 1979 (M. Owada), NSMT & CBM. India. Kumaon-Himalaya, Distr. Nain Tal, Bhim Tal 1,500 m, 1 ♂, 10. vi. 1971, 2 ♂, 20. vi. 1971, 1 ♂, 27. vi. 1971 (de Freina), in Mr Sommerer's coll.

Distribution. Nepal, India.

Three males from Godavari in 1991 and two females from Jiri recorded as *mucidaria* (Sato, 1993, 1994) should have been identified with this new species. The other specimens recorded from Nepal by me (Sato, 1993, 1994) and the male shown in plate 38, fig. 2 (Sato, 1993) are true *mucidaria*. I have not examined any material from Thailand yet.

Darisa missionaria (Wehrli), **stat. & comb. nov.** (Figs 15-17)

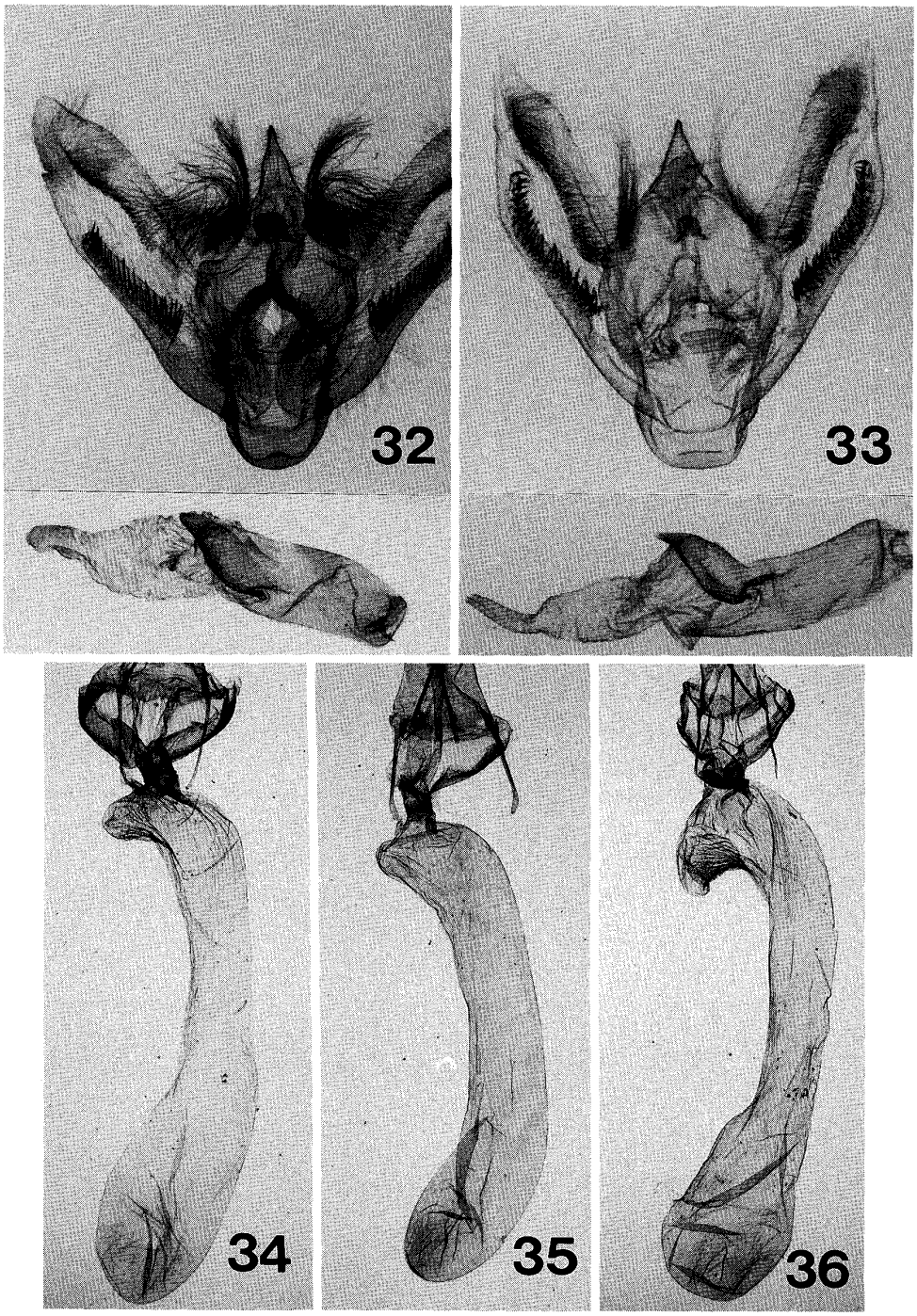
Medasina parallela missionaria Wehrli, 1941, *in* Seitz, *Macrolepid. World* **4** (Suppl.): 447, pl. 39, row b.

Chiang Mai, Doi Inthanon 1,300 m, 2 ♂, 1 & 3. x. 1985 (M.S.A.); Pakia, 1 ♂, 23. vii. 1981 (K.M.A.Y.).

Missionaria was originally described as a Chinese subspecies of *Medasina parallela* Prout. Dr Stüning kindly examined the genitalia of the type specimens of *parallela* and *missionaria*, and informed me that *missionaria* is not a subspecies of *parallela*, but a good species. I also examined the holotype of *parallela* without dissection when I visited the Natural History Museum, London, in 1989.

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Figs 32-33. Male genitalia of the type material of *Darisa* spp. 32: *Darisa maxima* Moore. Lectotype. Gen. prep. no. 1970-DS. ZMB. 33: *Medasina parallela* Prout. Holotype. BMNH. Photographs by Dr Stüning.
Figs 34-36. Female genitalia of *Darisa* spp. 34: *D. peracuta* sp. nov. RS-4339. 35: *D. maxima* Moore. RS-4322. 36: *D. mucidaria* (Walker). RS-4349.

Type material examined. Lectotype (Figs 15-17), here designated, ♂, "Chasseurs Indigènes des Missionaires de Ta-tsien-Loû, 1906/*Medasina parallela* Prt. *missionaria* Whli. ♂, abgebildet Seitz IV Suppl. fig., Dr. Wehrli/Genitalia preparation no. 1971-DS", ZFMK. Paralectotypes, here designated, 2 ♂, "Chasseurs indigènes de Tâ-tsien-lou, Récolte de 1910"; 1 ♀, "Ginfu-Shan, Kr. Nanchuan, S.-O. Szechuan, October 1932, leg. Friedrich,

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Coll. Dr. Wehrli/Genitalia preparation no. 1972-DS" (Fig. 47); 1 ♀, "Wassuländchen, N.-W. Szechuan, September 1932, leg. Friedrich, Coll. Dr. Wehrli", ZFMK.

More similar to *Medasina firmilinea* Prout than to *parallela*. No stable differences can be found in superficial appearance between *missionaria* and *firmilinea*. However, both species can be easily separable from each other by the male genitalia. *Firmilinea* was described from Assam by Prout (1926 : 23). Recently it was recorded from Nepal by me (Sato, 1993 : 23), but has not been found in Thailand yet. I examined one of the syntypes of *firmilinea* to confirm my identification of this complex. Here I intend to assign *firmilinea* to the genus *Darisa* (**comb. nov.**).

Type material examined. Lectotype of *Medasina firmilinea* (Fig. 11), here designated, ♂, labelled "Type/Shillong xi. 93, Assam/*Medasina firmilinea* Prout ♂ type/Rothschild Bequest B.M. 1939-1", BMNH.

Male genitalia (Fig. 45). Different from those of *firmilinea* (Fig. 46) as follows. Distal part of juxta lightly sclerotized, bearing a pair of horn-like projections, while in *firmilinea* it is heavily sclerotized, pointed at apex. Sacculus shorter with less spines in number. Aedeagus with longer and stouter spines on vesica.

Darisa lampasaria (Hampson)

Medasina lampasaria Hampson, 1895 : 288.
Darisa lampasaria : Sato, 1995 : 34.

Chiang Mai, Doi Inthanon Nat. Park 1,600 m, 1 ♂, 22-24. x. 1984 (Karsholt, Lomholdt, Nielsen).

Coremecis maculata (Warren)

Deileptenia maculata Warren, 1899, *Novit. zool.* **6** : 52.
Coremecis maculata : Holloway, 1993 : 204.

Nakhon Nayok, Kao Yai, 1 ♂, 25. viii. 1981 (K.M.A.Y.), 1 ♂, 11-19. xi. 1985 (M.S.A.).

Coremecis stueningi **sp. nov.** (Figs 5-6)

Length of forewing. 18-19 mm. Very similar to *maculata* in markings, but a little smaller in size, wings tinged with brown, discocellular spots more developed.

Male genitalia (Fig. 31). Similar to those of *maculata* but different from them as follows. Oblong tongue-like projection of gnathos much shorter ; valva more slender ; saccular process not incurved, but swollen apically, bearing more setal spines in number. Apical blade-like process of aedeagus with two tooth-like lateral projections.

Holotype. ♂, India, "Naga hills, 500-600 ft., Aug.-Sept. 1889 (W. Doherty)/Collectio H.J. Elwes/Rothschild Bequest", BMNH. Paratypes. 3 ♂ 1 ♀, "Naga hills, 1,500 ft. Sept.-Oct. 1889 (W. Doherty)/Collectio, H. J. Elwes/Rothschild Bequest 1939-1", BMNH. 1 ♂, "N-Thailand, Chiangmai, Maemoh Lampang, 28. 12. 1989 (leg. Cotton)", ZFMK. 1 ♂, India, Khasi Hill, ix. 1987 (native collector), RS.

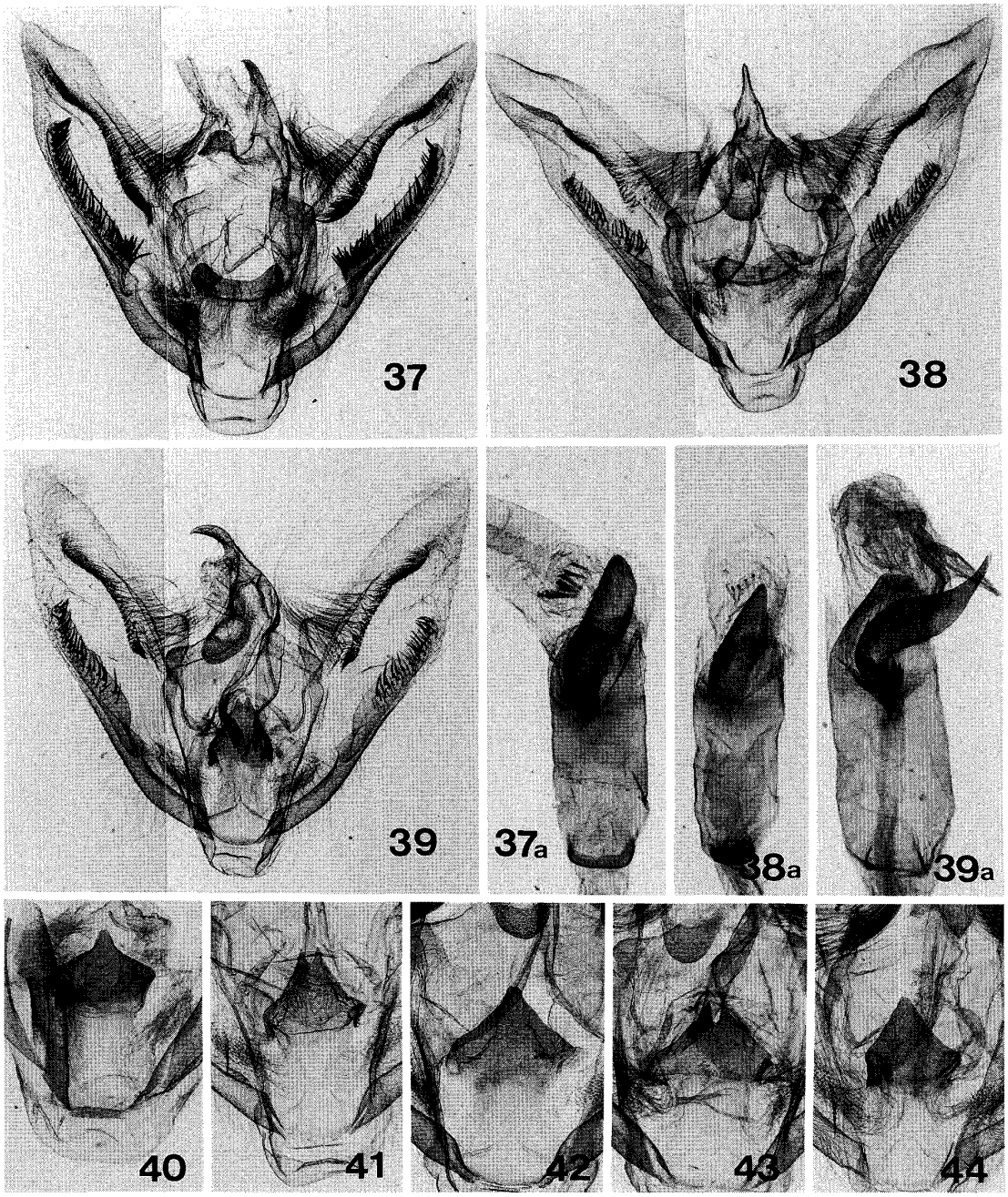
Distribution. Thailand, India.

Coremecis nigrovittata (Moore)

Hemerophila nigrovittata Moore, 1868, *Proc. zool. Soc. Lond.* **1867** : 626.

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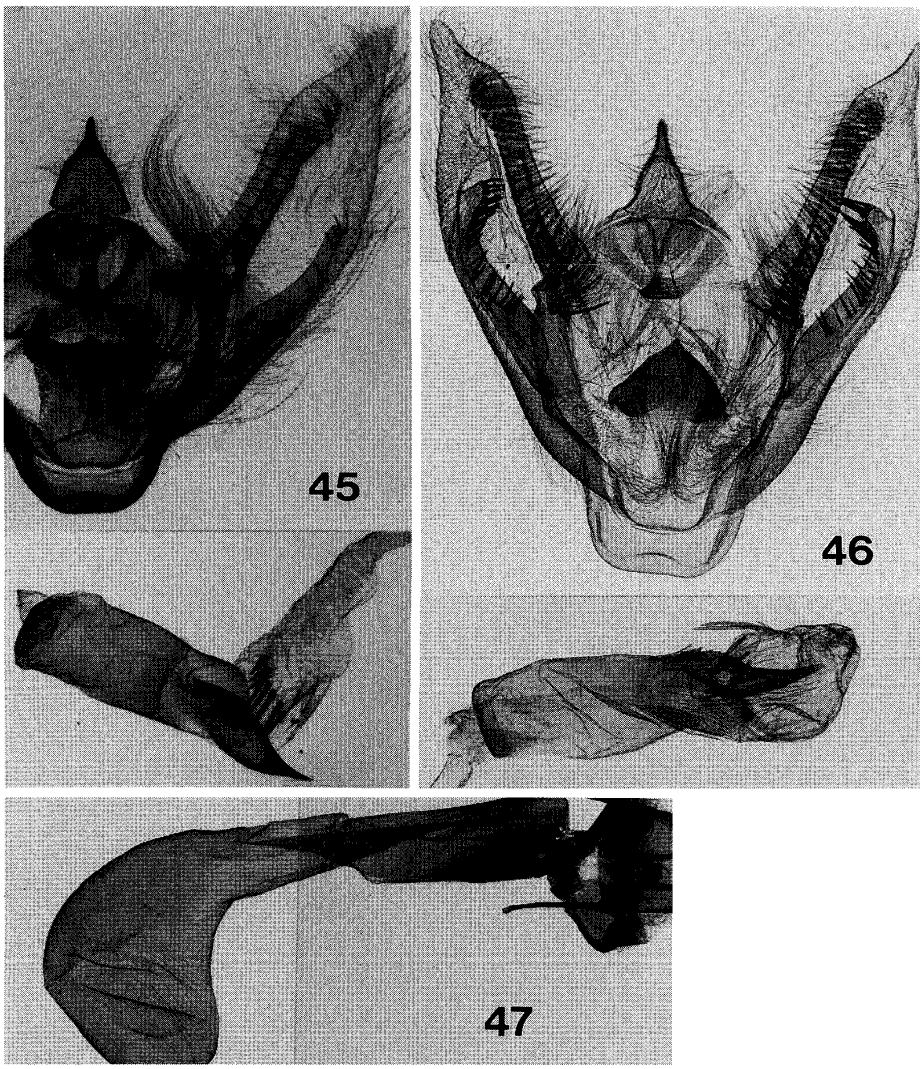
Figs 37-44. Male genitalia of *Darisa* spp. a : aedeagus. 37 : *D. peracuta* sp. nov. RS-4346. 38 : *D. maxima* Moore. RS-4345. 39 : *D. mucidaria* (Walker). RS-4343. 40-44 : Variation of the shape of the apical part of juxta in *D. mucidaria* (Walker). 40 : Lectotype of *mucidaria*. BMNH. 41 : Holotype of *plagiaria*. BMNH. 42 : RS-4431. 43 : RS-4432. 44 : RS-4426.

Coremecis nigrovittata : Sato, 1994 : 52.

Chiang Mai, Doi Suthep, 2 ♂, 8-10. vii. 1966 (H. Inoue) ; Doi Pui 1,300 m, 1 ♂, 1-4. ix. 1987 (M.S.A.Y.). Nakhon Nayok, Khao Yai 800 m, 1 ♀, 9. viii. 1987 (M.S.A.Y.). Ranong, Na Kha 250 m, 15. x. 1985 (K.M.S.A.).

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Figs 45–46. Male genitalia of the type material of *Darisa* spp. 45: *Medasina parallela missionaria* Wehrli. Lectotype. ZFMK. 46: *Medasina firmilinea* Prout. Lectotype. BMNH.
Fig. 47. Female genitalia of *Medasina parallela missionaria* Wehrli. Paralectotype. ZFMK. 45 & 47 by Dr Stüning.

Chorodna strixaria (Guenée)

Hemerophila strixaria Guenée, 1857, *in* Boisduval & Guenée, *Hist. nat. Insectes* (Lépid.) **9**: 217.
Medasina strixaria: Moore, 1887, *Lepid. Ceylon* **3**: 408.
Chorodna strixaria: Holloway, 1993: 200.

Nakhon Nayok, Khao Yai 800 m, 1 ♂, 9. viii. 1987 (M.S.A.Y.), 1 ♂, 11–19. xi. 1985 (M.S.A.). Chanthaburi, Khao Soi Dao 400 m, 1 ♂, 7–8. x. 1985 (K.M.S.A.). Loei, Phu Rua 800 m, 1 ♂, 15–19. xi. 1985 (M.S.A.).

Chorodna mauraria (Guenée)

Hemerophila mauraria Guenée, 1857, *in* Boisduval & Guenée, *Hist nat. Insectes* (Lépid.) **9**: 218.
Medasina mauraria: Hampson, 1895: 285.
Chorodna mauraria: Sato, 1994: 53.

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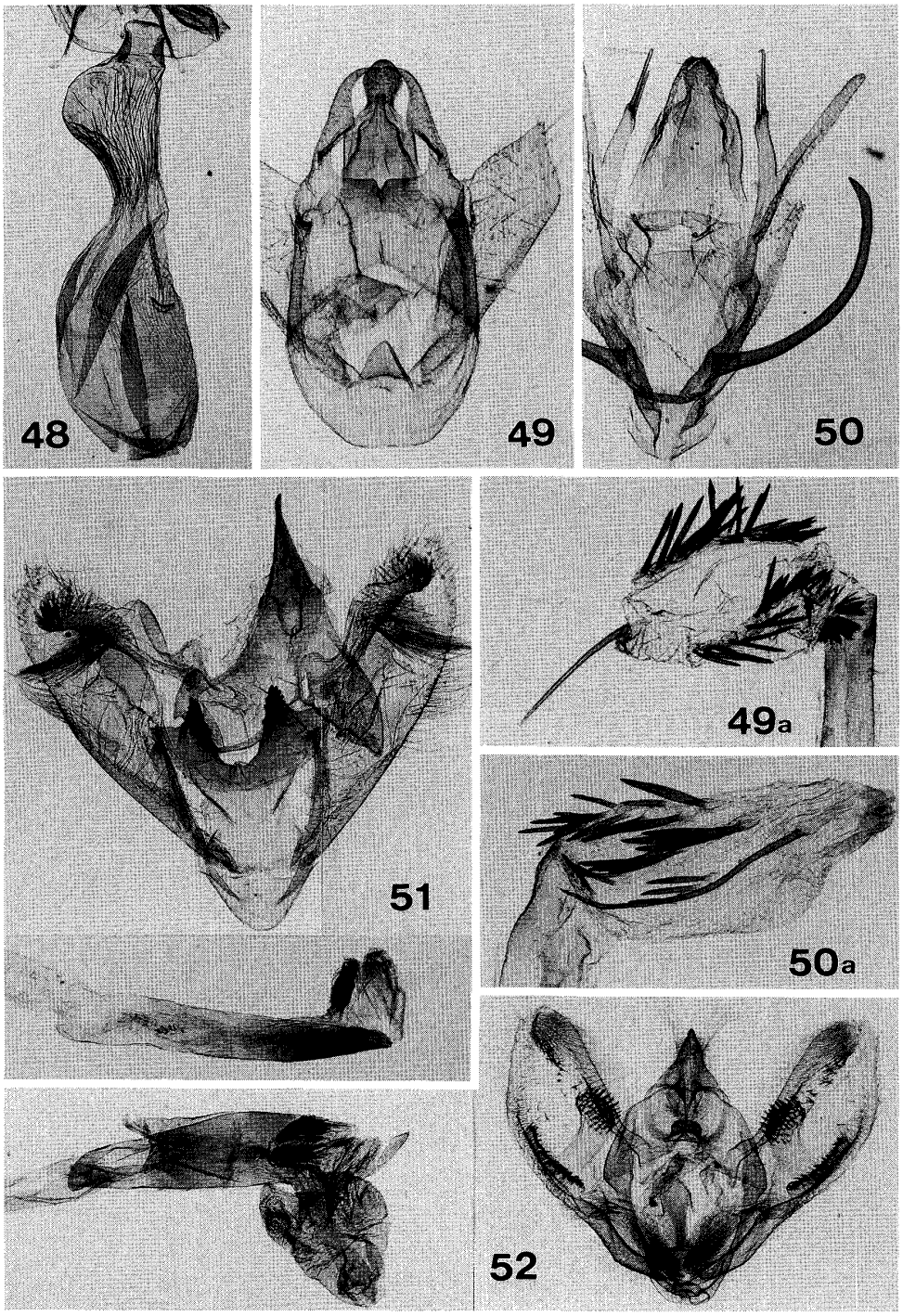


Fig. 48. Female genitalia of *Uliula kurokoi* sp. nov. Paratype. RS-4056.
Figs 49-52. Male genitalia. a: aedeagus. 49: *Ephemerophila lignata* (Warren). RS-4459. 50. *Ephemerophila torridaria* (Moore). RS-3365. 51: *Boarmia trispinaria* Walker. Lectotype. BMNH. 52: *Hypomecis oblivia* (Prout). RS-4336.

Chiang Mai, Doi Pui 1,300 m, 1 ♂, 30. v. 1983 (K.M.A.Y.); Doi Pakia 1,500 m, 1 ♀, 5. xi. 1985 (M.S.A.); Doi Inthanon 2,571 m, 1 ♀, 22. v. 1983 (K.M.A.Y.), 1 ♀, 10. ix. 1987 (S.A.Y.); Doi Inthanon, Maeo Khunklang 1,300 m, 1 ♀, 16-17. x. 1983 (M. Owada).

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Chorodna quadrinotata (Warren)

Medasina quadrinotata Warren, 1893, *Proc. zool. Soc. Lond.* **1893**: 417.
Chorodna quadrinotata: Sato, 1995: 33.

Chiang Mai, Doi Pui 1,400 m, Phu Phing Palace, 2 ♂, 7-9. ix. 1987 (M. Owada).

Chorodna creataria (Guenée)

Hemerophila creataria Guenée, 1857, *in* Boisduval & Guenée, *Hist. nat. Insectes* (Lépid.) **9**: 217.
Medasina creataria: Hampson, 1895: 286.
Chorodna creataria: Sato, 1994: 53.

Chiang Mai, 1 ♂ 1 ♀, vi. 1986 (*ex* T. Masui); Doi Pui, 1 ♂, 26. v. 1986 (native collector); Doi Pakia 1,500 m, 3 ♂, 5. xi. 1985 (M.S.A.); Doi Inthanon 1,300 m, 1 & 3. xi. 1985 (M.S.A.); Doi Angkhang 1,450 m, 1 ♂, 16. v. 1983 (K.M.A.Y.). Nakhon Nayok, Khao Yai 800 m, 1 ♂, 19. xi. 1985 (M.S.A.).

Chorodna testaceata (Moore)

Choerodes testaceata Moore, 1868, *Proc. zool. Soc. Lond.* **1867**: 615.
Chorodna testaceata: Hampson, 1895: 244.

Chiang Mai, Doi Inthanon, Maeo Khun Klang 1,300 m, 1 ♂, 16-17. x. 1983 (M. Owada); Doi Inthanon 1,300 m, 1 & 3. xi. 1985 (M.S.A.); Doi Pui 1,300 m, 1 ♂, 26-27. x. 1985 (M.S.A.); Maetaeng, 1 ♂, 6. x. 1988 (native collector).

Chorodna pallidularia Moore

Chorodna pallidularia Moore, 1868, *Proc. zool. Soc. Lond.* **1867**: 613.

Nakhon Nayok, Khao Yai 800 m, 3 ♂ 1 ♀, 11-19. xi. 1985 (M.S.A.), 2 ♂, 14. vi. 1983 (K.M.A.Y.).

Chorodna complicataria Walker

Chorodna complicataria Walker, 1860, *List Specimens lepid. Insects Colln Br. Mus.* **21**: 493.

Ranong, Na Kha 250 m, 1 ♂, 15. x. 1985 (K.M.S.A.). Nakhon Si Thammarat, Tha Sala, Nop Pitam, Khao Luang Natn. Pk. H.Q. 120 m, 1 ♂, 6 & 9. viii. 1987 (M. Owada).

Chorodna metaphaearia (Walker)

Cyclidia metaphaearia Walker, [1863], *List Specimens lepid. Insects Colln Br. Mus.* **26**: 1482.
Chorodna metaphaearia: Hampson, 1895: 244.

Chiang Mai, Doi Angkhang 1,450 m, 1 ♀, 16. v. 1983 (K.M.A.Y.); Doi Pui 1,300 m 1 ♀, 26-27. x. 1985 (M.S.A.); Doi Inthanon 1,300 m, 1 & 3. xi. 1985 (M.S.A.); Doi Inthanon, Maeo Khun Klang 1,300 m, 1 ♂ 16 ♀, 17. x. 1983 (M. Owada); Doi Suthep 1,200 m, 1 ♂, 23. x. 1983 (M. Owada). Nakhon Nayok, Khao Yai 800 m, 2 ♂, 11-19. xi. 1985 (M.S.A.).

Sinameda basistrigaria (Moore)

Hemerophila basistrigaria Moore, 1868, *Proc. zool. Soc. Lond.* **1867**: 626.
Sinameda basistrigaria: Warren, 1894, *Novit. zool.* **1**: 432.

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Chiang Mai, Doi Inthanon Nat. Pak 2,200-2,500 m, 2 ♂ 1 ♀, 22-23. x. 1984 (Karsholt, Lomholdt, Nielsen).

Lassaba albidaria albidaria (Walker)

Boarmia albidaria Walker, 1866, *List Specimens lepid. Insects Colln Br. Mus.* **35**: 1582.
Medasina albidaria: Hampson, 1895: 289.
Lassaba albidaria: Holloway, 1993: 203.

Chiang Mai, Doi Inthanon 2,500 m, 5 ♂, 3-5. ix. 1987 (M. Owada). Doi Inthanon 2,571 m, 1 ♂, 9. ix. 1987 (A.Y.), 1 ♀, 10. ix. 1987 (S.A.Y.).

Lassaba acribomena (Prout)

Medasina acribomena Prout, 1928, *Bull. Hill Mus. Witley* **2**: 157.
Lassaba acribomena: Holloway, 1993: 203.

Tha Sala Kra Raw, Kan Leong, Khao Luang Natn. Pk. 650 m, 3 ♂, 7-8. viii. 1987 (M. Owada).

Zanclomenophra subusta (Warren)

Zanclopera subusta Warren, 1901, *Novit. zool.* **8**: 37.
Zanclomenophra subusta: Holloway, 1993: 193.

Nakhon Nayok, Khao Yai 800 m, 1 ♀, 8. viii. 1987, 1 ♀, 9. viii. 1987; 1 ♂ 1 ♀, 22. ix. 1987 (M.S.A.Y.).

Arichanna furcifera Moore

Arichanna furcifera Moore, 1888, *in* Hewitson & Moore, *Descr. new Indian lepid. Insects Colln late Mr Atkinson*: 275.

Chiang Mai, Doi Inthanon 1,300 m, 1 ♂, 1 & 3. xi. 1985 (M.S.A.), Doi Inthanon 2,571 m, 1 ♀, 2. xi. 1985 (M.S.A.), 1 ♀, 8. ix. 1987 (M.Y.), 1 ♂, 11. ix. 1987 (M.S.A.).

Arichanna marginata Warren

Arichanna marginata Warren, 1893, *Proc. zool. Soc. Lond.* **1893**: 423.

Chiang Mai, Doi Inthanon 2,571 m, 1 ♂, 9. ix. 1987 (A.Y.), 1 ♀, 10. ix. 1987 (S.A.Y.).

Arichanna transfasciata Warren

Arichanna transfasciata Warren, 1893, *Proc. zool. Soc. Lond.* **1893**: 425.

Chiang Mai, Doi Pui 1,300 m, 3 ♂, 26-27. x. 1985 (M.S.A.); Doi Chang Khian 1,250 m, 1 ♂, 29. v. 1983 (K.M.A.Y.).

Arichanna tramesata Moore

Arichanna tramesata Moore, 1868, *Proc. zool. Soc. Lond.* **1867**: 658.

Chiang Mai, Doi Inthanon 2,571 m, 2 ♂ 2 ♀, 22. v. 1983 (K.M.A.Y.), 4 ♂, 2. xi. 1985 (M.S.A.), 1 ♂, 9. ix. 1987 (A.Y.), 1 ♂, 11. ix. 1987 (M.S.A.).

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Ophthalmitis pertusaria (Felder & Rogenhofer)

Boarmia pertusaria Felder & Rogenhofer, 1875, *Reise öst. Fregatte Novara* (Zool.) **2** (Abt. 2): pl. 125, fig. 17.
Ophthalmitis pertusaria: Sato, 1993: 16.

Chiang Mai, Doi Pui 1,400 m, Phu Phing Palace, 1 ♂, 7-9. ix. 1987 (M. Owada); Doi Inthanon Nat. Park, Siriphum 1,200-1,300 m, 1 ♂, 21-24. x. 1984 (Karsholt, Lomholdt, Nielsen). Petchabun, Lom Sak, Nam Nao 800 m, 1 ♂, 18-19. viii. 1987 (M. Owada). Loei, Phu Rua 800 m, 1 ♂, 15-19. vii. 1987 (M.S.A.Y.).

Pseudalcis trispinaria (Walker), **comb. nov.** (Fig. 27)

Boarmia trispinaria Walker, 1860, *List Specimens lepid. Insects Colln Br. Mus.* **21**: 378.

Chiang Mai, Doi Suthep, 1 ♂, 24. vii. 1981 (K.M.A.Y.); Doi Inthanon, South Ridge 1,650 m, 1 ♂, 18-21. x. 1983 (M. Owada).

The male genitalia (Fig. 51) show that this species is a typical member of the genus *Pseudalcis*. The male genitalia of *P. catoriata* Warren, 1897, *Novit. zool.* **4**: 97, the type species of the genus, were illustrated by Holloway (1993, fig. 440). I examined one of the syntypes of *trispinaria* to identify the Thai specimens.

Type material examined. Lectotype (Fig. 27), here designated, ♂, "Type/58.60/E. India", BMNH.

Catoria sublavaria (Guenée)

Boarmia sublavaria Guenée, 1857, *in* Boisduval & Guenée, *Hist. nat. Insectes* (Lépid.) **9**: 256.
Catoria Sublauaria: Prout, 1929, *Novit. zool.* **35**: 139.

Chiang Mai, 2 ♂, 1. iii. 1990 (native collector). Pae, Wang Chin, 1 ♂, 20. ii. 1990. Nakhon Nayok, Khao Yai Nat. Park 700 m, 1 ♂, 29. ix-6. x. 1984 (Karsholt, Lomholdt, Nielsen). Chanthaburi, Khitchakut 500 m, 1 ♂, 9. vi. 1983 (K.M.A.Y.).

Catoria olivescens Moore

Catoria olivescens Moore, 1888, *in* Hewitson & Moore, *Descr. new Indian lepid. Insects Colln late Mr Atkinson*: 244.

Chiang Mai, 1 ♂, 27. i. 1990, 10 ♂, 23-26. ii. 1990, 2 ♂, 22-30. iii. 1990 (native collector). Pae, Wang Chin, 2 ♂, 20. ii. 1990 (native collector).

Ephemerophila lignata (Warren), **comb. nov.** (Fig. 28)

Hemerophila lignata Warren, 1894, *Novit. zool.* **1**: 680

Chiang Mai, Doi Pui 1,400 m, Phu Phing Palace, 1 ♂, 7-9. ix. 1987; Doi Inthanon, South Ridge 1,650 m, 1 ♂, 18-21. x. 1983 (M. Owada); Doi Chang Khian, 1 ♂, 21. vii. 1981 (K.M.A.Y.).

Male genitalia (Fig. 49) indicate that this species is a typical member of the genus *Ephemerophila*.

Ephemerophila subterminalis (Prout)

Hemerophila subterminalis Prout, 1925, *Novit. zool.* **32**: 56.

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Menophra subterminalis: Holloway, 1976, *Moths Borneo spec. Ref. Mt Kinabalu*: 79.
Ephemerophila subterminalis: Holloway, 1993: 187.

Nakhon Nayok, Khao Yai 800 m, 1 ♂, 19. vi. 1983 (K.M.A.Y.). Loei, Phu Luang Wildlife Sanctuary 700-900 m, 1 ♀, 8-14. x. 1984 (Karsholt, Lomholdt, Nielsen).

Ephemerophila torridaria (Moore), **comb. nov.** (Fig. 29)

Menophra torridaria Moore, 1888, *in* Hewitson & Moore, *Descr. new Indian lepid. Insects Colln late Mr Atkinson*: 237.

Chiang Mai, Doi Angkhang 1,450 m, 1 ♂, 16. v. 1983 (K.M.A.Y.).

Male genitalia are as shown in Fig. 50. A long free arm from basal part of valva is characteristic, and a costal process with a short projection from inner side shows this species to belong to the genus *Ephemerophila*.

Dasyboarmia subpilosa (Warren)

Hemerophila subpilosa Warren, 1894, *Novit. zool.* **1**: 434.
Menophra subpilosa: Sato, 1987, *Tinea* **12** (Suppl.): 253.
Metamenophra subpilosa: Inoue, 1990, *Tinea* **13**: 17.
Dasyboarmia subpilosa; Holloway, 1993: 189.

Chiang Mai, Doi Suthep 1,200 m, 2 ♂, 23. x. 1983 (M. Owada); Doi Pakia 1,500 m, 1 ♀, 24. v. 1983 (K.M.A.Y.). Nakhon Nayok, Khao Yai 800 m, 1 ♂, 20. vi. 1983 (K.M.A.Y.), 1 ♂, 7. viii. 1987, 2 ♂, 9. viii. 1987 (M.S.A.Y.). Chanthaburi, Khao Soi Dao 400 m, 1 ♂, 6. vi. 1983 (K.M.A.Y.). Loei, Phu Rue 800 m, 1 ♂, 15-19. viii. 1987 (M.S.A.Y.).

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Sato, R. 1994. Geometridae: Ennominae (part). *In* Haruta, T. (ed.), Moths of Nepal, part 3. *Tinea* **14**

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(Suppl. 1): 41-62, pls 73-76.
Sato, R., 1995. Geometridae: Ennominae (part). *In* Haruta, T. (ed.), Moths of Nepal, part 4. *Tinea* **14** (Suppl. 2): 28-37, pls 102-103 (in press).

摘　　要

タイ国産 Boarmiini (シャクガ科エダシャク亜科) の記録 (第2報) (佐藤力夫)

本報は，大阪府立大学 (1981, 1983, 1985, 1987) と国立科学博物館 (1987) が実施したタイ国鱗翅類調査によって得られた資料に基づく，シャクガ科エダシャク亜科 Boarmiini 族に属する種の記録で，1991年の報文に次ぐ第2報にあたる．前報では，3大属 *Hypomecis, Cleora, Alcis* の34種を記録したが，本報では従来 *Medasina* 属として扱われた種を中心に新たに12属を取り上げるとともに，*Alcis, Hypomecis* 両属についてもその後得られた知見を追加し，合計42種の全標本のデータを記録した．また，関連する資料としてタイ国から未発見の2種についても言及した．族の残りの属についても順次報告していきたい．本報で記載した新種は次の3種である．*Uliura kurokoi* Sato (Thailand, India), *Darisa peracuta* Sato (Nepal, India), *Coremecis stueningi* Sato (Thailand, India).

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